AMENDMENTS TO THE CLAIMS

The following listing of the claims replaces all prior versions and listings of claims for this application. Within this listing of the claims, claims 2, 32-34, 36-45, 48, and 52-54 are amended; claim 49 is canceled; and claim 58 is new. Claim 1, which was previously canceled, is reintroduced as new claim 58.

1. **(Canceled)**

2. **(Currently amended)** A functionalized isoapoptolidin compound comprising ~~a modified~~ an isoapoptolidin core or a stereoisomer thereof, in which:

(a) at least one hydroxyl group in the isoapoptolidin core is replaced with a substituent selected from C_1-C_{24} hydrocarbyloxy, C_2-C_{25} acyloxy, C_2-C_{25} haloacyloxy C_2-C_{25} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{25} carbonato, halogenated C_2-C_{25} carbonato, C_2-C_{25} thiocarbonato, halogenated C_2-C_{25} thiocarbonato, carbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, and protected hydroxyl groups;

(b) at least one 1,3-diene functionality in the isoapoptolidin core is replaced by the product of a Diels-Alder reaction with a dienophile;

(c) at least one carbon-carbon double bond in the isoapoptolidin core is replaced with a carbon-carbon single bond; and/or

(d) at least one 1,2-diol functionality in the isoapoptolidin core is replaced with a cyclic ether.

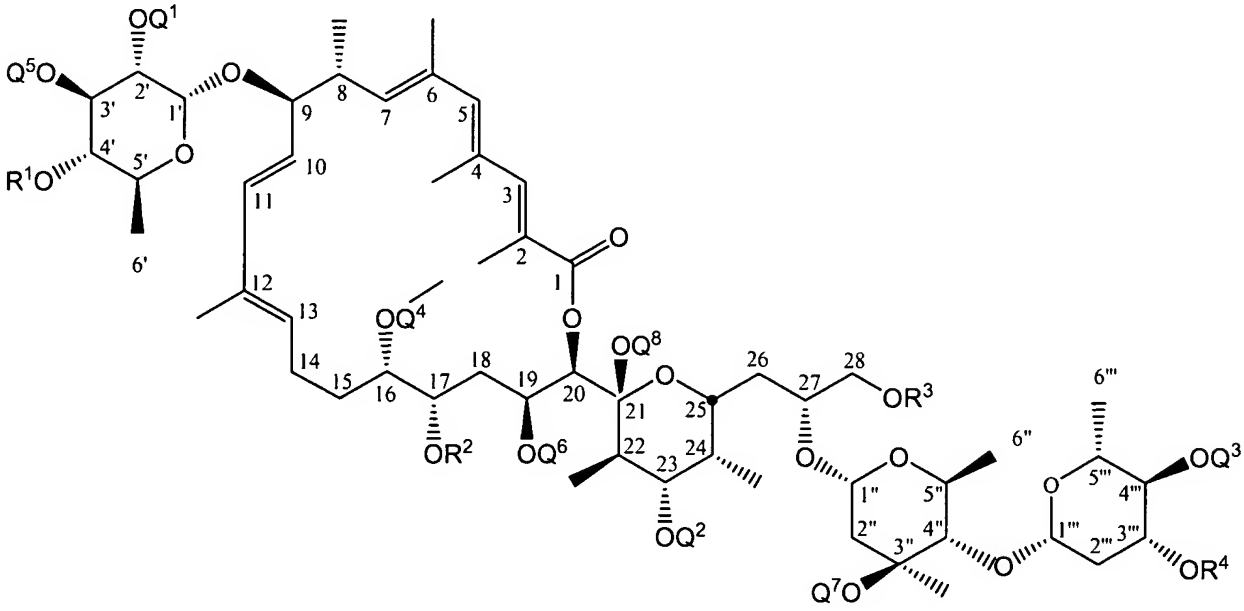
3. **(Original)** The functionalized isoapoptolidin compound of claim 2, in which at least one hydroxyl group in the isoapoptolidin core is replaced with a substituent selected from C_1-C_{24} hydrocarbyloxy, C_2-C_{25} acyloxy, C_2-C_{25} haloacyloxy C_2-C_{25} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{25} carbonato, halogenated C_2-C_{25} carbonato, C_2-C_{25} thiocarbonato, halogenated C_2-C_{25} thiocarbonato, carbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, and protected hydroxyl groups.

4. **(Original)** The functionalized isoapoptolidin compound of claim 3, wherein the substituent is selected from C_1-C_{12} hydrocarbyloxy, C_2-C_{13} acyloxy, C_2-C_{13} haloacyloxy C_2-C_{13} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{13} carbonato, halogenated C_2-C_{13} carbonato, C_2-C_{13} thiocarbonato, halogenated C_2-C_{13} thiocarbonato, carbamoyloxy, N-(C_1-C_{12} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{12} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{12} hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted sulfamoyloxy, (C_1-C_6 alkoxy)methyl ether, (C_1-C_6 alkylthio)methyl ether, and tri(C_1-C_{12} hydrocarbyl)-substituted silyloxy.

5. **(Original)** The functionalized isoapoptolidin compound of claim 4, wherein the substituent is selected from C_1-C_{12} hydrocarbyloxy, C_2-C_{13} acyloxy, and tri(C_1-C_{12} hydrocarbyl)-substituted silyloxy.

6. **(Original)** A compound having the structure of formula (II)

(II)



wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_{12} hydrocarbyl, acyl of the formula -(CO)-R^5 in which R^5 is C_1-C_{12} hydrocarbyl, and hydroxyl-protecting groups; and

R^1, R^2, R^3, and R^4 are C_1-C_{12} alkyl or H,

or a stereoisomer thereof.

7. **(Original)** The compound of claim 6, having the stereoisomeric configuration of formula (I).

8. **(Original)** The compound of claim 6, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, R^3, and R^4 are C_1-C_4 alkyl.

9. **(Original)** The compound of claim 8, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, R^3, and R^4 are methyl.

10. **(Original)** The compound of claim 7, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, R^3, and R^4 are C_1-C_4 alkyl.

11. **(Original)** The compound of claim 10, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, R^3, and R^4 are methyl.

12. **(Original)** The compound of claim 6, wherein:

Q^1 is -(CO)-R^5 and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^2 and Q^3 are -(CO)-R^5 and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^3 is -(CO)-R^5 and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^4 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;

Q^5 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;

Q^6 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;

Q^6 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or

Q^8 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

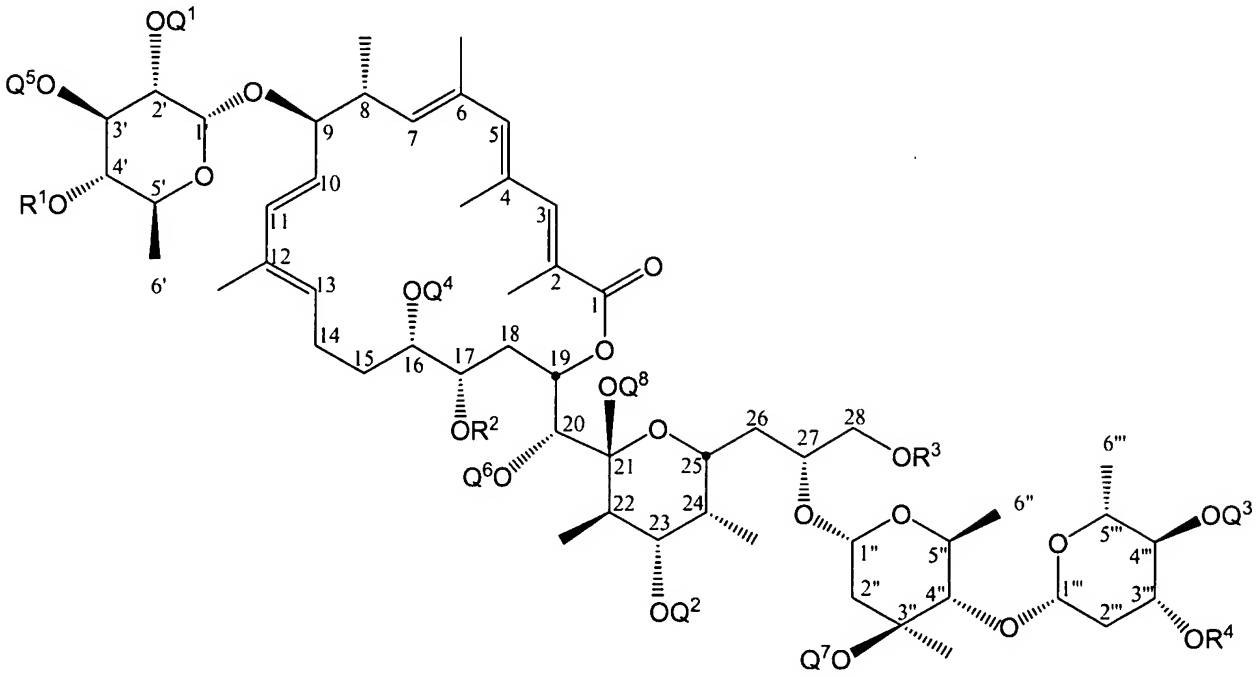
13. **(Original)** The compound of claim 12, wherein:
Q^1 is benzoyl and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are acetyl and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is acetyl and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is acetyl and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

14. **(Original)** The compound of claim 7, wherein:
Q^1 is -(CO)-R^5 and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are -(CO)-R^5 and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is -(CO)-R^5 and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

15. **(Original)** The compound of claim 14, wherein:
Q^1 is benzoyl and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are acetyl and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is acetyl and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is acetyl and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

16. **(Previously presented)** A compound having the structure of formula (III)

(III)



wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are selected from H, C_1-C_{12} hydrocarbyl, acyl of the formula -(CO)-R^5 in which R^5 is C_1-C_{12} hydrocarbyl, and hydroxyl-protecting groups; and

R^1, R^2, R^3, and R^4 are C_1-C_{12} alkyl or H, with the proviso that at least one of Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 is other than H when R^1, R^2, R^3, and R^4 are methyl and the compound has the stereoisomeric configuration of formula (III),

or a stereoisomer thereof.

17. **(Original)** The compound of claim 16, having the stereoisomeric configuration of formula (III).

18. **(Original)** The compound of claim 16, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, R^3, and R^4 are C_1-C_4 alkyl.

19. **(Original)** The compound of claim 18, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, R^3, and R^4 are methyl.

20. **(Original)** The compound of claim 17, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, R^3, and R^4 are C_1-C_4 alkyl.

21. **(Original)** The compound of claim 20, wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, R^3, and R^4 are methyl.

22. **(Original)** The compound of claim 16, wherein:

Q^1 is -(CO)-R^5 and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^2 and Q^3 are -(CO)-R^5 and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^3 is -(CO)-R^5 and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;

Q^4 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;

Q^5 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;

Q^6 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;

Q^6 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or

Q^8 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

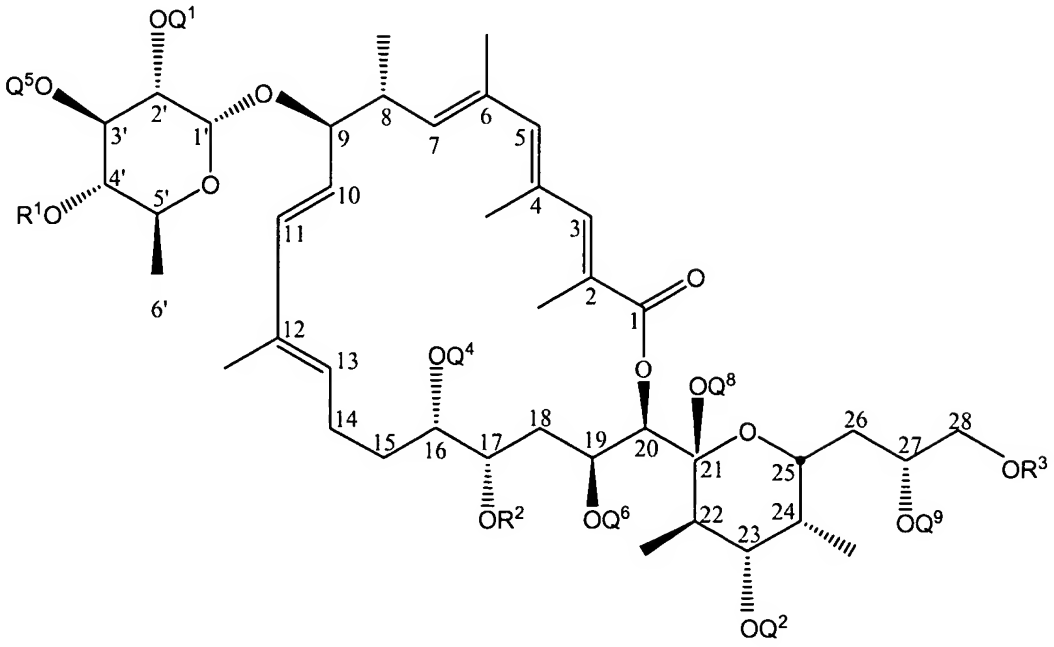
23. **(Original)** The compound of claim 22, wherein:
Q^1 is benzoyl and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are acetyl and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is acetyl and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is acetyl and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

24. **(Original)** The compound of claim 17, wherein:
Q^1 is -(CO)-R^5 and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are -(CO)-R^5 and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is -(CO)-R^5 and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is -(CO)-R^5 and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is C_1-C_6 alkyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

25. **(Original)** The compound of claim 24, wherein:
Q^1 is benzoyl and Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^2 and Q^3 are acetyl and Q^1, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^3 is acetyl and Q^1, Q^2, Q^4, Q^5, Q^6, Q^7, and Q^8 are H;
Q^4 is acetyl and Q^1, Q^2, Q^3, Q^5, Q^6, Q^7, and Q^8 are H;
Q^5 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^6, Q^7, and Q^8 are H;
Q^6 is acetyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H;
Q^6 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^7, and Q^8 are H; or
Q^8 is methyl and Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, and Q^7 are H.

26. **(Original)** A compound having the structure of formula (IV)

(IV)



wherein:

Q^1, Q^2, Q^4, Q^5, Q^6, Q^8, and Q^9 are independently selected from H, C_1-C_{12} hydrocarbyl, acyl of the formula -(CO)-R^5 in which R^5 is C_1-C_{12} hydrocarbyl, and hydroxyl-protecting groups; and

R^1, R^2, and R^3 are independently selected from C_1-C_{12} alkyl and H,

or a stereoisomer thereof.

27. **(Original)** The compound of claim 26, having the stereoisomeric configuration of formula (IV).

28. **(Original)** The compound of claim 26, wherein:

Q^1, Q^2, Q^4, Q^5, Q^6, Q^8, and Q^9 are independently selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, and R^3 are C_1-C_4 alkyl.

29. **(Original)** The compound of claim 28, wherein:

Q^1, Q^2, Q^4, Q^5, Q^6, Q^8, and Q^9 are independently selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, and R^3 are methyl.

30. **(Original)** The compound of claim 27, wherein:

Q^1, Q^2, Q^4, Q^5, Q^6, Q^8, and Q^9 are independently selected from H, C_1-C_6 hydrocarbyl, -(CO)-R^5 wherein R^5 is C_1-C_6 hydrocarbyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are C_1-C_6 hydrocarbyl; and

R^1, R^2, and R^3 are C_1-C_4 alkyl.

31. **(Original)** The compound of claim 30, wherein:

Q^1, Q^2, Q^4, Q^5, Q^6, Q^8, and Q^9 are independently selected from H, C_1-C_6 alkyl, -(CO)-R^5 wherein R^5 is C_1-C_6 alkyl, and -Si($R^6R^7R^8$) wherein R^6, R^7, and R^8 are all methyl or all ethyl; and

R^1, R^2, and R^3 are methyl.

32. **(Currently amended)** A compound prepared by reaction of the compound of claim 6 with a dienophile, wherein ~~under conditions effective to result in a Diels-Alder reaction at~~ the C-10/C-13 diene functionality is converted to a cyclic group.

33. **(Currently amended)** A compound prepared by reaction of the compound of claim 16 with a dienophile, wherein ~~under conditions effective to result in a Diels-Alder reaction at~~ the C-10/C-13 diene functionality is converted to a cyclic group.

34. **(Currently amended)** A compound prepared by reaction of the compound of claim 26 with a dienophile, wherein ~~under conditions effective to result in a Diels-Alder reaction at~~ the C-10/C-13 diene functionality is converted to a cyclic group.

35. **(Original)** The compound of any one of claims 32, 33, and 34, wherein the dienophile is an N-halosuccinimide.

36. **(Currently amended)** A compound prepared by ~~reaction~~ catalytic hydrogenation of the compound of claim 6, wherein ~~with a reagent and under conditions effective to hydrogenate~~ at least one carbon-carbon double bond of the compound of claim 6 is converted to a single bond.

37. **(Currently amended)** A compound prepared by ~~reaction~~ catalytic hydrogenation of the compound of claim 16, wherein ~~with a reagent and under conditions effective to hydrogenate~~ at least one carbon-carbon double bond of the compound of claim 16 is converted to a single bond.

38. **(Currently amended)** A compound prepared by ~~reaction~~ catalytic hydrogenation of the compound of claim 26, wherein ~~with a reagent and under conditions effective to hydrogenate~~ at least one carbon-carbon double bond of the compound of claim 16 is converted to a single bond.

39. **(Currently amended)** A compound prepared by ~~reaction of the~~ nucleophilic addition of the compound of claim 6, wherein ~~with a nucleophilic co-reactant and under conditions effective to result in nucleophilic addition to~~ at least one carbon-carbon double bond of the compound of claim 6 is converted to a single bond.

40. **(Currently amended)** A compound prepared by ~~reaction~~ nucleophilic addition of the compound of claim 16, ~~with a nucleophilic co-reactant and under conditions effective to result in nucleophilic addition to~~ wherein at least one carbon-carbon double bond of the compound of claim 16 is converted to a single bond.

41. **(Currently amended)** A compound prepared by ~~reaction~~ nucleophilic addition of the compound of claim 26, ~~with a nucleophilic co-reactant and under conditions effective to result in nucleophilic addition to~~ wherein at least one carbon-carbon double bond of the compound of claim 26 is converted to a single bond.

42. **(Currently amended)** ~~A compound prepared by reaction of the compound of~~ The compound of claim 6, wherein ~~with a reagent effective to result in conversion of~~ at least one 1,2-diol functionality of the compound of claim 6 is converted to a cyclic ether.

43. **(Currently amended)** ~~A compound prepared by reaction of the~~ The compound of claim 16, wherein ~~with a reagent effective to result in conversion of~~ at least one 1,2-diol functionality of the compound of claim 16 is converted to a cyclic ether.

44. **(Currently amended)** ~~A compound prepared by reaction of the~~ The compound of claim 26, wherein ~~with a reagent effective to result in conversion of~~ at least one 1,2-diol functionality of the compound of claim 26 is converted to a cyclic ether.

45. **(Currently amended)** A pharmaceutical composition comprising a therapeutically effective amount of the compound of claims [[1,]] 2, 6, 16, [[or]] 26 or 58 and a pharmaceutically acceptable carrier.

46. **(Original)** The composition of claim 45, wherein the therapeutically effective amount is a unit dosage and the composition is composed of a unit dosage form.

47. **(Original)** The composition of claim 45, comprising a sustained release formulation.

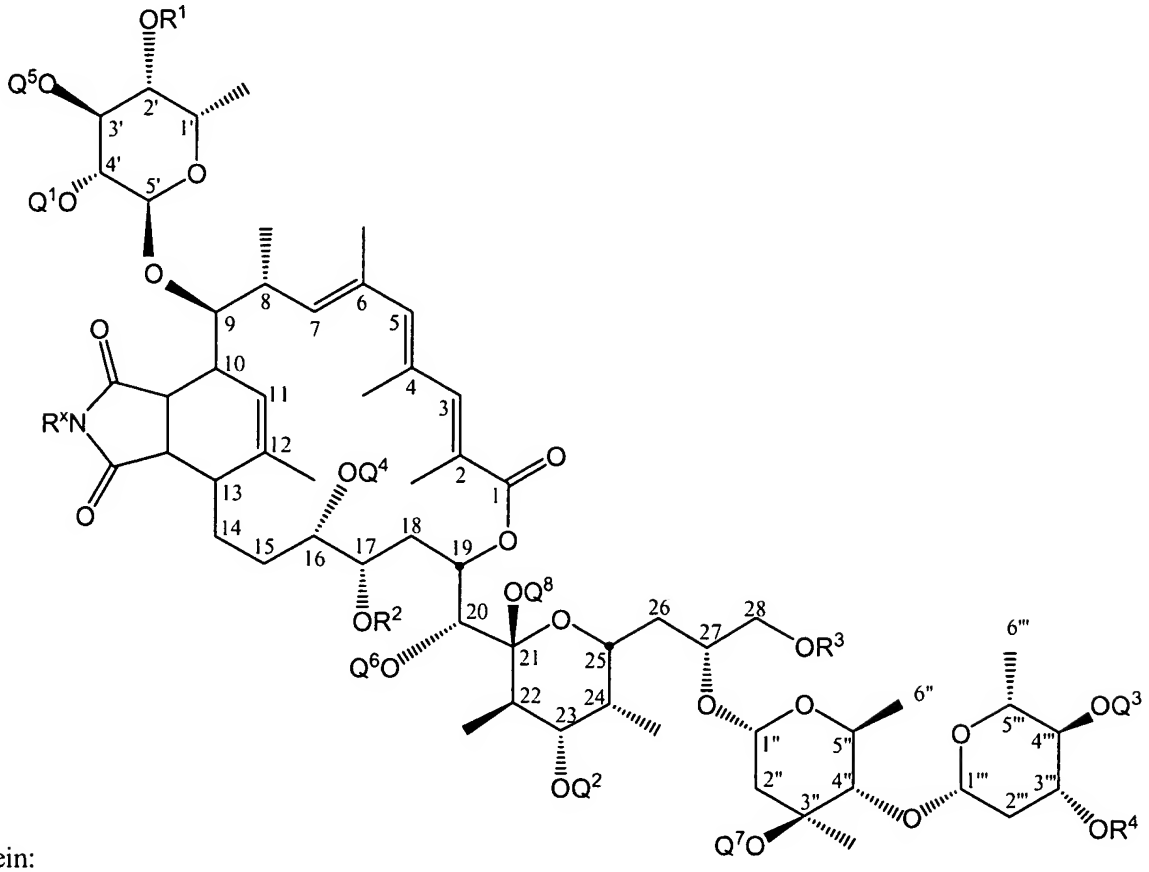
48. **(Currently amended)** A method for ~~treating a mammalian patient in need of treatment for a disorder responsive to~~ inducing apoptosis in cancer cells, ~~comprising administering to the patient a therapeutically effective amount of a~~ wherein the compound of anyone of claims 2, 6, 16, ~~or~~ 26, or 58 ~~and a pharmaceutically acceptable carrier~~ is administered to the cancer cells.

49. **(Canceled)** ~~The method of claim 48, wherein the disorder is cancer.~~

50. **(Original)** A composition of matter comprising deglycosylated isoapoptolidin in isolated, purified form.

51. **(Original)** A compound having the structure of formula (V)

(V)



wherein:

Q^1, Q^2, Q^3, Q^4, Q^5, Q^6, Q^7, and Q^8 are independently selected from H, C_1-C_{12} hydrocarbyl, acyl of the formula -(CO)-R^5 in which R^5 is C_1-C_{12} hydrocarbyl, and hydroxyl-protecting groups; and

R^1, R^2, R^3, and R^4 are C_1-C_{12} alkyl or H,

or a stereoisomer thereof.

52. **(Currently amended)** ~~Compounds prepared by oxidatively cleaving the~~ The compound of claim 51 oxidatively cleaved at the C-20/C-21 bond ~~in the compound of claim 51~~.

53. **(Currently amended)** ~~Compounds prepared by oxidatively cleaving the~~ The compound of claim 51 oxidatively cleaved at the C-22/C-23 bond ~~in the compound of claim 51~~.

54. **(Currently amended)** A functionalized apoptolidin compound comprising ~~a modified~~ an apoptolidin core in which:

(a) at least one hydroxyl group in the apoptolidin core is replaced with a substituent selected from C_1-C_{24} hydrocarbyloxy, C_2-C_{25} acyloxy, C_2-C_{25} haloacyloxy C_2-C_{25} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{25} carbonato, halogenated C_2-C_{25} carbonato, C_2-C_{25} thiocarbonato, halogenated C_2-C_{25} thiocarbonato, carbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, and protected hydroxyl groups;

(b) at least one 1,3-diene functionality in the apoptolidin core is replaced by the product of a Diels-Alder reaction with a dienophile;

(c) at least one carbon-carbon double bond in the apoptolidin core is replaced with a carbon-carbon single bond; and/or

(d) at least one 1,2-diol functionality in the apoptolidin core is replaced with a cyclic ether.

55. **(Original)** The functionalized apoptolidin compound of claim 54, in which at least one hydroxyl group in the isoapoptolidin core is replaced with a substituent selected from C_1-C_{24} hydrocarbyloxy, C_2-C_{25} acyloxy, C_2-C_{25} haloacyloxy C_2-C_{25} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{25} carbonato, halogenated C_2-C_{25} carbonato, C_2-C_{25} thiocarbonato, halogenated C_2-C_{25} thiocarbonato, carbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{24} hydrocarbyl)-substituted sulfamoyloxy, and protected hydroxyl groups.

56. **(Original)** The functionalized apoptolidin compound of claim 55, wherein the substituent is selected from C_1-C_{12} hydrocarbyloxy, C_2-C_{13} acyloxy, C_2-C_{13} haloacyloxy C_2-C_{13} thioacyloxy, C_2-C_{25} thiohaloacyloxy, C_2-C_{13} carbonato, halogenated C_2-C_{13} carbonato, C_2-C_{13} thiocarbonato, halogenated C_2-C_{13} thiocarbonato, carbamoyloxy, N-(C_1-C_{12} hydrocarbyl)-substituted carbamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted carbamoyloxy, thiocarbamoyloxy, N-(C_1-C_{12} hydrocarbyl)-substituted thiocarbamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted thiocarbamoyloxy, sulfamoyloxy, N-(C_1-C_{12}

hydrocarbyl)-substituted sulfamoyloxy, N,N-di(C_1-C_{12} hydrocarbyl)-substituted sulfamoyloxy, (C_1-C_6 alkoxy)methyl ether, (C_1-C_6 alkylthio)methyl ether, and tri(C_1-C_{12} hydrocarbyl)-substituted silyloxy.

57. **(Original)** The functionalized apoptolidin compound of claim 56, wherein the substituent is selected from C_1-C_{12} hydrocarbyloxy, C_2-C_{13} acyloxy, and tri(C_1-C_{12} hydrocarbyl)-substituted silyloxy.

58. **(New)** A composition of matter comprising isoapoptolidin in isolated, purified form.